time × diet), TAG (-0.4 ± 0.1, -0.01 ± 0.1 mmol/L; $p = 0.001$ time × diet) and increases in HDL-C (0.1 ± 0.03, 0.06 ± 0.04 mmol/L; $p = 0.002$ time × diet).
Conclusions: Both LC and HC diets achieved substantial weight loss, improvements in HbA1c and fasting glucose. The LC yielded greater improvements in lipid profile, diurnal blood glucose stability and reductions in diabetes medication requirements, suggesting LC are advantageous for T2DM management.
Funding source(s): NHMRC.

Concurrent session 9: policy and dietary guidelines

NUTRADITIONS: DOES A TRADITIONAL WORIMI DIET ACHIEVE THE CURRENT AUSTRALIAN DIETARY GUIDELINES?

K. Duncanson [1], A. Hills [2], M. Lock [3], C. Collins [4]. [1] *Nutrition and Dietetics, University of Newcastle, Australia;* [2] *Community Nutrition, Hunter New England Local Health District, University of Newcastle, Australia;* [3] *School of Medicine and Public Health, University of Newcastle, Australia;* [4] *Priority Research Centre in Physical Activity & Nutrition, University of Newcastle, Australia*
E-mail: kerith@helpyourself.com.au (K. Duncanson)

Background/Aims: To achieve health equality for Aboriginal Australians, novel health change strategies are required and need to be based on respect for connection to country, tradition and culture. Nutraditions aims to determine whether the ADG can be achieved with an eating pattern that is nutritionally equivalent to a traditional Aboriginal diet. This dietary approach has the potential to reduce the risk of diet-related chronic disease in Worimi and Biripi Nations.
Methods: Using a participatory action research methodology, extensive community consultation preceded a comprehensive literature review. To date, 21 individual in-depth interviews with elders and eight community focus groups have been conducted to gather information about traditional Worimi and Biripi diets. Qualitative data was analysed thematically. Quantitative analysis of dietary information was conducted prior to diet modelling, nutrient analysis and nutritional equivalence testing using FoodWorks.
Results: The ADG can be achieved using traditional Aboriginal foods and eating patterns. Availability and acceptability of traditional foods is limited, so contemporary alternatives for bush foods were identified. Individual contemporary foods rarely matched traditional foods due to the low saturated fat content and high nutrient density of traditional foods. Food combinations can be used to achieve required nutritional equivalence in simulated "Worimi diet" meal plans.
Conclusions: The feasibility of implementing Nutraditions at an individual or community level requires further community consultation to determine preferred resources and delivery mode. The potential for application of Nutraditions in other Aboriginal communities and as a dietary approach for non-Aboriginal people will be discussed.
Funding source(s): Hunter Medical Local.

DIETARY PATTERNS OF OLDER ADULTS: A COMPARISON OF METHODS

M.G. Thorpe [1], C.M. Milte [1], D. Crawford [1], S.A. McNaughton [1]. [1] *Centre for Physical Activity and Nutrition Research, School of Exercise and Nutrition Sciences, Deakin University, Melbourne, Australia*
E-mail: mgt@deakin.edu.au (M.G. Thorpe)

Background/Aims: Despite increasing application of dietary pattern methods in nutritional epidemiology, few studies directly compare approaches. This study aimed to compare the dietary patterns of older adults using two empirical-based methods: principal component analysis (PCA) and cluster analysis (CA).
Methods: Participants (n = 3,959, 55-65 years, 48% men) completed a postal survey including a 111-item food frequency questionnaire. Food items were categorised into 52 groups and entered into PCA and CA, stratified by sex. Factor scores were calculated for PCA-derived dietary patterns, standardised and compared across clusters using ANOVA and bonferroni post-hoc test. $P < 0.05$ was considered significant.
Results: PCA identified four patterns in men and two patterns in women. CA identified three patterns in both sexes. Men in the 'fruit, vegetable and white meat' cluster had higher scores on the 'fruit, vegetable dishes and white meat' and 'vegetables' PCA patterns compared to the 'red and processed meat, white bread and high-sugar products' and 'spreads, biscuits, cake and confectionary' patterns, mean (95% CI): 0.92 (0.82, 1.02) vs. 0.74 (0.63, 0.84) vs. -0.43 (-0.50, -0.35) vs. 0.60 (0.46, 0.74), respectively. Women in the 'fruit, vegetable, nuts and fish' cluster scored highest on the 'vegetable, fruit and fish' PCA pattern compared to the 'red and processed meat, white bread, and high-sugar products' PCA pattern, 1.05 (0.97, 1.14) vs. -0.14 (-0.21, -0.07), respectively.
Conclusions: PCA and CA identified similar dietary patterns in older adults. Comparison of methods in the same population will assist with interpretation across studies.
Funding source(s): ARC; Diabetes Australia Research Trust.

AUSTRALIANS ACTIVELY AVOIDING CORE GRAIN FOODS

C. Cashman [1], S. Hyland [2], M. Broom [1]. [1] *Grains & Legumes Nutrition Council, North Ryde NSW, Australia;* [2] *Colmar Brunton Pty Ltd, St Leonards NSW, Australia*
E-mail: m.broom@glnc.org.au (M. Broom)

Background/Aims: The 2013 ADG recommend six serves of grain foods per day. The aim was to determine core grain intake by Australians and the barriers preventing people from meeting recommendations.
Methods: A two-day food record was completed by a sample of 2,247 subjects aged 15 - 70 years (35% males), and stratified based on Census data. Participants completed a closed-ended questionnaire relating to intake and attitudes to grain foods. Grain serves were based on 2013 ADG. Data were compared to the same survey conducted in 2011.
Results: The average intake of core grain foods was 3.9 serves per day, 3.5 for women. There has been a significant reduction in core grain food intake in women since the last survey in 2011 (10%; $p < 0.05$). Of total respondents, 60% reported actively limiting grain foods. The most common reasons for not meeting recommendations were to assist weight loss (16%) and linking grains with bloating (16%). Prompted with serve size information, the average estimate of the recommended serves per day was 2.4, while 32% responded the recommended number of serves of core grain foods per day was 'too many'.
Conclusions: The results indicate Australians are falling well short of recommendations and are actively choosing to avoid core grain foods. Clarity on the role of grains in weight management and bloating is needed as well as strong communication on the recommended number of serves and the benefits of grains to support the ADG.
Funding source(s): Grains & Legumes Nutrition Council.

RELIABILITY AND VALIDITY OF A FOOD FREQUENCY QUESTIONNAIRE WITH SIX-MONTH TO SIX-YEAR-OLD CHILDREN

L. Carpenter [1], R. Boak [1], J. Porter [2], V. Flood [3], E. Waters [1]. [1] *Jack Brockhoff Child Health and Wellbeing Program, School of Population Health, University of Melbourne, Australia;* [2] *Department of Epidemiology and Public Health, University College London, UK;* [3] *Faculty of Health Sciences, University of Sydney, Australia*
E-mail: lmca@unimelb.edu.au (L. Carpenter)

Background/Aims: Understanding children's dietary patterns is an important factor in planning interventions to improve child health. The aim of this study was to determine the reliability and validity of a parent-reported food frequency questionnaire (FFQ), to assess dietary intake of children in a birth cohort study.
Methods: Twenty-nine parents of children aged six months to six years completed three face-to-face interviews, each approximately 12 days apart. A 40 item FFQ and a triple-pass 24 hour recall were completed at each session. Intra-rater reliability of the FFQ was determined using weighted kappa (K_w) coefficients to compare sessions one and two. Twenty-four hour recall data were categorised according to the response categories of the FFQ. To determine concurrent validity, mean frequency of items over three days were compared to responses from the first FFQ using one-way ANOVA with a test for linearity.
Results: K_w values for foods ranged between 0.43 (desserts) and 0.96 (peanut butter) and for beverages, between 0.73 (soft drink) and 1.0 (low fat milk), with the exceptions of fresh fruit (0.23) and water (0.38). Mean

frequency of cheese, yoghurt, fresh fruit and plain milk significantly increased from the 3 × 24 hour recalls, as the FFQ categories increased ($p < 0.05$), but no significant trends were seen for vegetables, potato chips, water or juice.
Conclusions: This FFQ provides reliable and valid information for many of the food items. Further investigation into the collection of information about fruit and water is warranted.
Funding source(s): NHMRC, Financial Markets FFC and the Victorian Government Department of Education and Early Childhood Development.

THE NUTRITIONAL PROFILE OF BABY FOOD PRODUCTS SOLD IN AUSTRALIAN SUPERMARKETS

E. Dunford [1], J.C.Y. Louie [2], K. Walker [3], V.M. Flood [4,5]. [1] *The George Institute for Global Health, Sydney, Australia;* [2] *School of Molecular Bioscience, University of Sydney, Australia;* [3] *Monash University, Melbourne, Australia;* [4] *Faculty of Health Sciences, University of Sydney, Australia;* [5] *St Vincent's Hospital, Sydney, Australia*
E-mail: jimmy.louie@sydney.edu.au (J.C.Y. Louie)

Background/Aims: To examine the nutritional profile of baby and toddler food products sold in Australia.
Methods: Nutrient information for baby and toddler foods available at Australian supermarkets was collected between Aug-Dec 2013. Levels of declared energy, total fat, saturated fat, sugars, sodium and estimated added sugar were examined, as well as the presence of additional micronutrients on the label. The Health Star Rating (HSR) system was used to determine the nutritional quality. The range of products on offer was also examined by product type.
Results: Of the 309 products included, 29% were fortified. On a per 100 g basis, these products on average provide 476 ± 486 kJ, 1.6 ± 2.4 g total fat, 10.7 ± 12.2 g total sugars, 2.7 ± 7.4 g added sugar, and 33.5 ± 66.5 mg sodium. Fruit-based products or products with fruit listed as an ingredient (58%) were the predominant product type. On the nutrition label, 42% displayed amount of at least one additional micronutrient while 37% did not display saturated fat. The most common HSR was 4 stars (45%).
Conclusions: The majority of baby foods sold in Australian supermarkets are ready-made fruit-based products aimed at children under 12 months of age. Baby and toddler foods are overlooked in public policy discussions pertaining to population nutrient intake but their relatively high sugar content deriving from fruits requires close attention to ensure these foods do not replace other more nutrient dense foods, and do not promote "sweet" taste in young children.
Funding source(s): N/A.

THE COMPLIANCE OF PACKAGED FOOD PRODUCTS IN INDIA WITH NATIONAL AND INTERNATIONAL NUTRITIONAL LABELLING STANDARDS

C. Johnson [1,2], E. Dunford [1,2], R. Guggilla [3], B. Neal [1,2]. [1] *The George Institute for Global Health, Sydney, Australia;* [2] *The University of Sydney, Australia;* [3] *The George Institute for Global Health, India*
E-mail: cjohnson@georgeinstitute.org.au (C. Johnson)

Background/Aims: India is experiencing a nutrition transition with the consumption of packaged foods rapidly increasing. Nutrition labels are essential if consumers are to understand the healthiness of these products. In 2011 the Food Safety and Standards Authority of India introduced regulation defining national nutrition labelling requirements and the Codex Alimentarius has recommended a global standard. The objective of this study was to quantify the compliance of the nutrition labels on Indian packaged foods with national and global benchmarks
Methods: The presence or absence of data for seven required nutrients was recorded for all food products available for sale in the branches of three major retail chains and three smaller stores in Hyderabad, India between 2010 and 2013.
Results: Data were collected for 6,805 packaged foods in 15 different food groups. Forty two percent of products displayed nutrient information on energy, protein carbohydrate, sugar and total fat, meeting the minimum requirements of the Food Safety and Standards Authority of India. Only 17% met the minimum criteria defined by the Codex Alimentarius which also requires the reporting of saturated fat and sodium with just 27% labelled for sodium.
Conclusions: The compliance of Indian packaged foods with food labelling requirements is sub-optimal. With the Indian population likely to consume much more packaged food over coming years full and effective food labelling will be essential. The failure of Indian legislation to require labelling of sodium and saturated fat may warrant review.
Funding source(s): N/A.

HOW DOES MONTHLY FOOD EXPENDITURE DIFFER ACROSS SELF-REPORTED DIETARY QUESTION REPONSES AND WEIGHT STATUS GROUPS?

G.A. Hendrie [1], M. Noakes [1]. [1] *Food and Nutrition Flagship, CSIRO, Adelaide, SA, Australia*
E-mail: gilly.hendrie@csiro.au (G.A. Hendrie)

Background/Aims: Shopping docket records may provide valuable data on quality of the composition of household food supply. The aim of this study is to investigate how food expenditure differs by individual's self-reported intake and weight status.
Methods: Height, weight and usual food intake by short questions (e.g. responses: once daily, 2-3 weekly) were reported by 813 adults who provided baseline data for a workplace healthy lifestyle intervention (60% female; age: 18 − 65 years; mean ± SD 37 ± 9.3 years; BMI 28.3 ± 12.9 kg/m^2). Usual food expenditure from one month of Rewards Card shopping docket data was used to estimate the proportion of total monthly expenditure per food category. Average expenditure per food category (% of total) was compared across responses to the food intake questions and weight status categories, using ANOVA.
Results: The greatest proportion of total monthly food expenses was on vegetables (12.3%), dairy (11.2%) and cakes/biscuits (7.8%). Obese people spent a significantly greater proportion of their monthly purchases on sweetened beverages (5.9 vs. 3.3%), cakes/biscuits (9.3 vs. 7.4%) and processed meat (5.2 vs. 4.1%), and less on fruit (5.4 vs. 7.3%) and vegetables (10.7 vs. 13.9%) relative to normal weight people ($p < 0.05$). There was a significant positive relationship between reported intake and expenditure for fruit, vegetables, dairy, poultry, fish, processed meat, sugar beverages ($p < 0.05$), but not for other food groups.
Conclusions: Household expenditure appears to reflect self-reported intake for some, but not all, foods. Differences in purchase patterns by weight status suggest obese individuals spend a larger portion of their food budget on non-core foods compared to normal weight individuals.
Funding source(s): CSIRO, Glycemic Index Foundation.

CHARACTERISING MEAL PATTERNS: A COMPARISON OF MEAL DEFINITIONS

R.M. Leech [1], T. Worsley [1], A. Timperio [1], S.A. McNaughton [1]. [1] *Centre for Physical Activity and Nutrition Research, Deakin University, Burwood, VIC, Australia*
E-mail: rleec@deakin.edu.au (R.M. Leech)

Background/Aims: To date, a variety of approaches have been used to define meals. This study examines the influence of different definitions of meals on the characterisation of meal patterns.
Methods: Dietary data collected via two 24-hour recalls during the 2011-12 National Nutrition and Physical Activity Survey ($n = 5242$ adults, ≥ 19 years) were analysed. Four definitions were applied: participant-identified, time-of-day, neutral [individual eating occasions (EOs) separated by >15 minutes], and neutral plus an energy criterion. Frequency of meals, snacks and all EOs, and energy intake (EI) from meals, snacks and all EOs were estimated, as appropriate. Differences were tested using paired *t*-tests. Agreement of meal and snack frequency between definitions were assessed, respectively, using intra-class correlation coefficients (ICC). For each definition, linear regression was used to estimate the proportion of variance in total EI predicted by frequency of EOs and meals and snacks.
Results: Mean frequency of meals differed between the participant-identified and time-of-day definitions (3.0 ± 0.5 vs. 2.8 ± 0.4; $p < 0.001$). There was also a significant difference between mean frequency of EOs between the neutral and neutral plus energy criterion definitions (5.5 ± 1.3 vs 4.8 ± 1.2; $p < 0.001$). There was good agreement for snack (ICC = 0.89) but not meal frequency (ICC = 0.37) between the participant-identified